

## First Observation of Cavity Nesting by a Female Blue Grosbeak

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**ABSTRACT.**—On 21 May 2003, we discovered a completed Blue Grosbeak (*Passerina caerulea*) nest in an Eastern Bluebird (*Sialia sialis*) nest box. On 28 May, the nest contained four whitish-tan eggs with light-brown, streaky and spotty markings, an unusual color pattern for Blue Grosbeak eggs. Species' identification was confirmed by capturing the breeding female in the nest box, and confirmed again later with identification of the chicks as Blue Grosbeaks. To our knowledge, this is the first published account of cavity nesting, artificial or otherwise, for this species. Received 27 September 2004, accepted 31 May 2005.

The Blue Grosbeak (*Passerina caerulea*) is a large bunting in the family Cardinalidae and is relatively common in the southeastern United States. However, little is known of the breeding ecology of this species (Ingold 1993). The nest is typically cup-shaped and composed of twigs, rootlets, and bark, is often lined with grass and/or fine hair, and sometimes contains artificial debris, such as cardboard, cellophane, or newspaper (Stabler 1959, Bent 1968, Ingold 1993). Blue Grosbeaks commonly build their nests in riparian thickets, fallow fields, open woodlands, and hedgerows, usually from 1 to 4 m above the ground (Stabler 1959, Bent 1968, Ehrlich et al. 1988).

Here, we detail an observation of cavity nesting by a pair of Blue Grosbeaks. We discovered the nest during an ongoing study of Eastern Bluebirds (*Sialia sialis*) in Craighead County, Arkansas. During the winter of 2002, we erected approximately 200 Eastern Bluebird nest boxes at 2 m above ground, with each box being at least 100 m from adjacent boxes. The site is composed mostly of pas-

tures and fallow fields, with some nest boxes located along mixed-hardwood forest edge.

We checked all nest boxes at least once per week to monitor nesting activity. On 21 May 2003, we discovered an unidentified, but complete, nest without eggs in a nest box in an area of open woodland dominated by northern red oak (*Quercus rubra*) and bordered on one side by a thin stand of privet (*Ligustrum* spp.). The nest was an open cup composed of grass, fine sticks, and several interwoven pieces of cellophane. Cellophane is commonly incorporated within nests of Blue Grosbeaks (Ingold 1993), possibly as a substitute for shed snakeskin, a common item in grosbeak nests (Strecker 1926). It is unclear why snakeskins are incorporated into grosbeak nests (Ingold 1993), but their addition to nest boxes with artificial nests may decrease predation (E. C. Medlin and TSR unpubl. data). This behavior is common in some obligate cavity-nesting species, including Tufted Titmouse (*Baeolophus bicolor*) and Great Crested Flycatcher (*Myiarchus crinitus*). We did not measure the nest, but the nesting material entirely covered the floor of the nest box (10 cm wide × 15 cm deep), and the nest cup covered the rear 70% of the nest-box floor. We estimated the inside diameter of the nest cup to be ~6–7 cm, which is similar to grosbeak nest-cup diameters reported by others (Ingold 1993).

On 28 May, we checked the nest again and it contained four oval eggs with light-brown, streaky and spotty markings, and a light, whitish-tan background color. Although Blue Grosbeak eggs are typically light blue to white and unmarked (Ingold 1993), some are lightly spotted with brown (Ingold 1993) or “distinctly marked with dots and spots of chestnut and subdued lilac” (Davie 1898:404). The size, color, and markings of the eggs we observed were similar to those of Brown-headed Cowbirds (*Molothrus ater*), so much so that we could not distinguish them from cowbird eggs. Although Blue Grosbeaks are frequent

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hosts of Brown-headed Cowbirds, and cowbirds are known to parasitize hosts nesting in nest boxes (Whitehead et al. 2000, 2002), we did not observe nest parasitism in any of our nest boxes during our 2-year study.

Prior to the discovery of the nest, we had observed a pair of Blue Grosbeaks near the nest box several times over a 2-week period. We suspected that the pair was nesting nearby, but not in the nest box. On 8 June, however, we captured a female Blue Grosbeak in the nest box by using a nest-box trap (Robinson et al. 2004); she was incubating the four eggs described above, which appeared to be pipping. When we revisited the nest again on 13 June, we found four nestlings approximately 5 days old and apparently in good condition. We identified the nestlings as Blue Grosbeaks (and not cowbirds) by virtue of their large conical bills and yellow rictal flanges. Although Brown-headed Cowbirds also have conical bills, grosbeaks' bills are obviously larger. In addition, Blue Grosbeak chicks have yellow rictal flanges (Baicich and Harrison 1997), whereas those of Brown-headed Cowbird chicks are cream-colored in the eastern subspecies (Baicich and Harrison 1997).

On 27 June, the nestlings were no longer in the nest. We assumed they fledged successfully because there were no obvious signs of nest predation, and predation at our field site is generally low (13% Eastern Bluebird nest predation; TJR and TSR unpubl. data).

Our observation of Blue Grosbeaks nesting in a nest box is unique for two reasons: (1) to our knowledge, this is the first record of cavity nesting by Blue Grosbeaks, and (2) the color pattern of the eggs was unusual. We know of few previously published reports of female Blue Grosbeaks laying eggs with brown spotty markings—a rare color pattern for Blue Grosbeak eggs (Davie 1898, Ingold 1993). Avian ecologists should be aware that cavity

nesting occasionally occurs in this species; the behavior may merit closer examination.

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#### LITERATURE CITED

- BAICICH, P. J. AND C. J. O. HARRISON. 1997. A guide to the nests, eggs, and nestlings of North American birds, 2nd ed. Academic Press, San Diego, California.
- BENT, A. C. 1968. Eastern Blue Grosbeak. Pages 67–75 in *Life histories of North American cardinals, grosbeaks, towhees, finches, sparrows, and allies (part 1)* (O. L. Austin, Jr., Ed.). U.S. National Museum Bulletin, no. 237, part 1. [Reprinted 1968, Dover Publications, New York.]
- DAVIE, O. 1898. Nests and eggs of North American birds. Landon Press, Columbus, Ohio.
- EHRLICH, P. R., D. S. DOBKIN, AND D. WHEYE. 1988. Blue Grosbeak. Page 556 in *The birder's handbook: a field guide to the natural history of North American birds*. Simon and Schuster, New York.
- INGOLD, J. L. 1993. Blue Grosbeak (*Guiraca caerulea*). *The Birds of North America*, no. 79.
- ROBINSON, T. J., L. M. SIEFFERMAN, AND T. S. RISCH. 2004. A quick, inexpensive trap for use with nest boxes. *North American Bird Bander* 29:115–116.
- STABLER, R. M. 1959. Nesting of the Blue Grosbeak in Colorado. *Condor* 61:46–48.
- STRECKER, J. K. 1926. On the use, by birds, of snakes' sloughs as nesting material. *Auk* 43:501–507.
- WHITEHEAD, M. A., S. H. SCHWEITZER, AND W. POST. 2000. Impact of brood parasitism on nest survival parameters and seasonal fecundity of six songbird species in southeastern old-field habitat. *Condor* 102:946–950.
- WHITEHEAD, M. A., S. H. SCHWEITZER, AND W. POST. 2002. Cowbird host interactions in a southeastern old-field: a recent contact area? *Journal of Field Ornithology* 73:379–386.